

Remarks

The amendments to claims 112, 115, 119, and 124 and the rejection under 35 U.S.C. 112, second paragraph

Claims 112, 119, and 124 have been amended so that it is clear that the “first database system” is “a first database system of the plurality thereof” and that the “second database system” is “a second database system of the plurality thereof”. The amendments thereby overcome the rejection under of those claims under 35 U.S.C. 112, second paragraph. The amendment to claim 115 adds a colon after “wherein”. None of the foregoing amendments affect the meanings of the claims, and the claims as amended are consequently fully supported by the Specification as filed.

The traversal of the rejections under 35 U.S.C. 103

What Applicants are claiming

Applicants’ invention is broadly set forth in claim 112, which as currently amended, reads as follows:

112. (currently amended) Apparatus for responding to a request, the request including one or more specifiers referring to objects belonging to a plurality thereof in a distributed database system that includes a plurality of database systems and the apparatus comprising:

a first database system of the plurality of database systems; and
a redirector which responds to the request when the request includes a specifier that cannot be interpreted in the first database system by causing the request to be executed at least in part in a second database system of the plurality of database systems, the request otherwise being executed in the first database system.

The claim’s limitations include a first database system belonging to a distributed database system that includes a plurality of database systems,, a second database system belonging to the system, and a

redirector which responds to the request when the request includes a specifier that cannot be interpreted *in the first database system* by causing the request to be executed at least in part *in a second database system* of the plurality of database systems, the request otherwise being executed *in the first database system*. (emphasis added)

The redirector must therefore redirect the request from one database system of the distributed system to another database system of the distributed system.

Examiner's rejection of claim 112

5 Examiner's rejection cites Draper for the claim's distributed database system and the first and second database systems and cites Jadav and Gupta for the redirector. As will be explained in more detail in the following, Jadav and Gupta do not disclose a redirector which causes a request that includes a specifier that cannot be interpreted in the first database system to be executed in the second database system, the request being
10 otherwise executed in the first database system, as required by the claim, and consequently, the combination of Draper and Jadav and Gupta does not show all of the limitations of the claim and examiner has not made the *prima facie* case of obviousness required for a rejection under 35 U.S.C. 103.

15 *The disclosure of Jadav and Gupta*

Jadav and Gupta begins with a discussion of the evolution of Web servers from servers that simply retrieved static Web pages through servers that interact with relational database systems to add material to Web pages to servers that retrieve Web pages from relational database systems and then discloses how a Web server that caches large objects
20 from the relational database system that provides the Web pages can improve the response time for such objects.

In her rejection of claim 112, Examiner refers Applicants to section 4.2 of Jadiv and Gupta and FIGs. 1 and 4 of the reference for the disclosure of the redirector. FIG. 1
25 shows a "First-generation Web site" in which the server simply accesses static Web pages. No database system is shown anywhere in FIG. 1, which is therefore simply not relevant to the present discussion. Section 4.2 and FIG. 4 of Jadiv and Gupta provides details of one version of a third-generation Web site. In the version, the Web pages are stored in the "Illustra ORDBMS" and contain embedded SQL queries. As set forth in the
30 paragraph at the end of section 4.2, when the Web server receives a request for a page from a browser, the Web server provides it to the Webdriver, which builds an SQL

statement that will retrieve the page from the database. When the page is retrieved from the database, the embedded SQL in the page is executed to fill the page with current data from the database system, and the page is returned to the server, which in turn provides it to the browser. The only database system in FIG. 4 is the Illustra ORDBMS, and it simply responds to SQL from the Web driver. There is no disclosure whatever in section 4.2 or FIG. 4 of any kind of redirection, to say nothing of the redirector set forth in claim 112, and consequently, the cited location provides no basis for Examiner's rejection of claim 112.

A portion of the disclosure of Jadiv and Gupta which is more relevant to the rejection of claim 112 is the discussion of caching large objects which begins at section 5. Section 6 describes an experimental embodiment for caching large objects. The embodiment is shown in FIG. 7. A discussion of the results of the caching experiment is found in Section 7. In summary, in the Illustra ORDBMS, data larger than approximately 8Kbytes must be stored as *large objects* in the database system. Large objects are typically digital audio and video clips. The only operations which the Illustra ORDBMS can perform on large objects are creation, selection, copying, and deletion. A large object may be a value of a field in an ORDBMS table. Each large object also has a unique identifier and may be referenced in the Illustra ORDBMS by its unique identifier.

The values of large objects tend to change much more slowly than the values of other objects in relational database systems and the size of large objects means that transferring them across a network requires much more bandwidth than transferring text objects does. For these reasons, large objects are attractive candidates for caching at Web servers. If a large object requested by a browser is cached at the browser's server, the large object can be transferred from the server and the hop from the ORDBMS to the server can be avoided for all of the requests for the large object that are made to that server..

FIG. 7 and the discussion beginning at page 17, col. 1, line 16 describe an implementation of Jadiv and Gupta's large object caching. The implementation works only with *static queries*, i.e., URLs that reference the large object by its unique identifier. In the

implementation shown in FIG. 7, a cache for large objects and a Webcache component have been added to the Web server. When a URL is received in the server, it goes to Webcache, which parses it to determine whether it is a static query for a large object. If it is, Webcache checks to see whether the large object is present in the cache for large objects; if it is, the server returns the large object from the cache to the browser; if the large object is not in the cache or the query is not a static query, the query goes to the Webdriver component of the server, which makes an SQL query from the query and sends that to the ORDBMS as previously described. If the query is a static query that is sent to the ORDBMS is the result of a cache miss, the large object returned from the ORDBMS is both sent to the browser and loaded into the large object cache.

While the caching system of FIG. 7 does do redirection, there is still only one database system in the caching system, namely the Illustra ORDBMS. That a Web server with a cache of large objects is not a database system becomes apparent in Jadiv and Gupta's discussion of dynamic queries at page 19, col. 1, lines 1-13. In a dynamic query, the URL specifies a query to be performed in the ORDBMS and the page that the query specifies in the ORDBMS may itself contain embedded queries; because the Web server of FIG. 7 is not a database system, dynamic queries cannot be executed in the Web server, but instead must always go to the ORDBMS. Further, because the Web server of FIG. 7 is not a database system, the redirection that is done in the caching system of FIG. 7 is not the redirection of claim 112, which requires that a query that is not redirected "[be] executed in the first database system". Because that is so, the caching system of FIG. 7 also provides no basis for the rejection of claim 112.

Patentability of the claims over the references

Because Jadiv and Gupta do not disclose the redirector of claim 112, Examiner has not made the *prima facie* case required for a rejection of a claim under 35 U.S.C. 103. As Examiner will immediately see, the argument just made applies also to independent claims 119, 124, 125, 128, and 131, and because all of the independent claims are patentable, so are all of the independent claims. Additionally, claims 117, 122, 126, and

129 are further patentable in their own rights over the references because Draper and Jadiv and Gupta disclose neither individually nor in combination

a server of the type that provides a program executing on the server with a standard interface for querying databases (claim 117)

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that includes a database system as a component. Claims 118, 123, 127, 130 are consequently patentable both because they are dependent from independent claims and also because they are dependent from claims which are patentable in their own rights over the references.

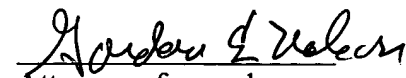
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Conclusion

Applicants have amended their claims to overcome Examiner's rejection of them under 35 U.S.C. 112, second paragraph and have further traversed the rejections under 35 U.S.C. 1103. Applicants have thus been fully responsive to Examiner's Office action of 8/12/2005 as required by 37 C.F.R. 1.111(b) and respectfully request that Examiner enter the claims as amended and reconsider her rejections, as provided by 37 C.F.R. 1.111(a). No fees are believed to be required for this amendment. If any should be, please charge them to deposit account number 501315.

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Respectfully submitted,


Attorney of record,

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Gordon E. Nelson
57 Central St., P.O. Box 782
Rowley, MA, 01969,
Registration number 30,093
Voice: (978) 948-7632
Fax: (866) 723-0359

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Gordon E. Nelson
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